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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,603	04/13/2001	Wu-Cheng Cheng	W9515-01	3751

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EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
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1725

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DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,603

Applicant(s)

CHENG ET AL.

Examiner

Christina Ildebrando

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 32-35, 40-42, 44-47, 49-51, 53-55, 57-62, and 64-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar et al.

Kumar et al. (US 5,079,202) discloses FCC catalysts which comprises a zeolite component and an inorganic oxide matrix which contains pollucite (column 1, lines 49-51). Suitable zeolites include Y zeolites, preferably USY and CREY (column 2, lines 5-10). Suitable matrix materials include alumina and silica sols (column 2, lines 10-14). It is taught that the catalyst composition contains 5-70 weight percent zeolite (column 1, lines 60-64). It is taught that the catalyst has a particle size range of 20-150 microns and an attrition index of 0-30 (column 2, lines 40-52). With regards to claims 20-31, Kumar et al. teaches that the catalyst composition may be combined with a FCC cesium additive to minimize the production of contaminants and coke (column 2, lines 50-60). Such an additive is considered to meet the second particulate material as claimed.

The reference does not disclose the specific properties claimed, i.e. kinetic conversion activity, surface area, and H₂O pore volume. However, the reference teaches the use of the same materials in amounts falling within the ranges instantly claimed. Therefore, it is the position of the examiner that such properties would

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inherently be present in the prior art composition. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

The "consisting essentially of" language in the claims is noted. The term limits the claim to the specified ingredients and those that do not affect the basic and novel characteristics of a composition. *Ex parte Davis et al.*, 80 USPQ 448. When applicant contends that modifying or additional components in the reference composition are excluded by the recitation "consisting essentially of," applicant has the burden of showing the basic and novel characteristics of the claimed composition, i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. *In re De Lajarte*, 143 USPQ 256.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Kumar et al.

3. Claims 36-39 and 40/36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kukes et al.

Kukes et al. (US 5,308,814) discloses a catalyst composition useful in hydrogenation processes. The catalyst composition comprises zeolite Y and a refractory inorganic oxide such as alumina wherein the zeolite Y is present in an amount in the range of 10-90% (column 8, lines 10-25). In an example, zeolite Y is combined with a

gamma alumina sol to yield a composition containing 80% zeolite and 20% alumina (column 16, Example 14).

The reference does not disclose the specific properties claimed, i.e. kinetic conversion activity, surface area, and H₂O pore volume. However, the reference teaches the use of the same materials in amounts falling within the ranges instantly claimed. Therefore, it is the position of the examiner that such properties would inherently be present in the prior art composition. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

The "consisting essentially of" language in the claims is noted. The term limits the claim to the specified ingredients and those that do not affect the basic and novel characteristics of a composition. *Ex parte Davis et al.*, 80 USPQ 448. When applicant contends that modifying or additional components in the reference composition are excluded by the recitation "consisting essentially of," applicant has the burden of showing the basic and novel characteristics of the claimed composition, i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. *In re De Lajarte*, 143 USPQ 256.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Kukes et al.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 43, 48, 52, 56, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al. as applied above for claims 32-35, 40-42, 44-47, 49-51, 53-55, 57-62, and 64-65 above, and further in view of Herbst et al.

The teachings of Kumar et al. are applied as above for claims 32-35, 40-42, 44-47, 49-51, 53-55, 57-62, and 64-65.

Kumar et al. does not teach the use of a REUSY zeolite.

Herbst et al. (US 5,055,437) teaches that conventional FCC catalysts usually contain zeolites such as REY, DAY, USY, and REUSY (column 2, lines 15-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of Kumar et al. in light of the disclosure of Herbst et al. Herbst et al. teaches the suitability of REUSY as a catalyst in FCC processes and further teaches its equivalence to the USY compositions taught by Kumar et al. Because of the art recognized functional equivalence of the CREY zeolite to the zeolites taught by Kumar et al. in FCC processes, it would have been obvious to one of ordinary skill to have substituted one known component for the other in the catalyst taught by Kumar et al.

6. Claims 32-35 and 40-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al., and further in view of Chester et al. and Herbst et al.

The teachings of Kumar et al. are as described above. With regards to the pore volume and attrition index values claimed, it is the position of the examiner that such properties, given that the reference teaches the use of the same materials in the same amounts, would be inherent in the composition taught by the reference. However, if it is considered that the properties are not inherently present in the prior art, then it is the position of the examiner that such claims would be obvious in light of the teachings of Chester et al. If the prior art does not in fact anticipate the instant claims, then the claims would have been obvious to one of ordinary skill in the art. *Ex parte Lee*, 31 USPQ 2d. 1105.

In this case, Chester et al. (US 4,442,223) teaches that the pore volume and attrition resistance of an FCC catalyst are important parameters (column 4, lines 35-40 and column 4, lines 60-62). It is specifically taught that for a given type of catalyst attrition resistance increases with increasing density and decreasing pore volume; while low pore volumes are desirable, too low a pore volume can lead to selectivity losses due to diffusional restrictions (column 4, lines 60-69). It is taught that for an FCC catalyst the pore volume is typically in the range of 0.30-0.45 cc/gm (H₂O) (column 5, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process optimization, since it has been held that there the general conditions of a claim are

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disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215. In this case, the secondary reference to Chester et al. establishes that the properties are result effective variables for FCC catalyst compositions, providing one of ordinary skill with motivation to optimize such variables to achieve the best results from the catalyst.

With regards to claims 43, 48, 52, 56, and 63, Kumar et al. does not teach the use of a REUSY zeolite.

Herbst et al. (US 5,055,437) teaches that conventional FCC catalysts usually contain zeolites such as REY, DAY, USY, and REUSY (column 2, lines 15-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of Kumar et al. in light of the disclosure of Herbst et al. Herbst et al. teaches the suitability of REUSY as a catalyst in FCC processes and further teaches its equivalence to the USY compositions taught by Kumar et al. Because of the art recognized functional equivalence of the CREY zeolite to the zeolites taught by Kumar et al. in FCC processes, it would have been obvious to one of ordinary skill to have substituted one known component for the other in the catalyst taught by Kumar et al.

Response to Arguments

7. Applicant's arguments filed 3/4/03 have been fully considered but they are not persuasive.

With regards to the Kumar et al. reference, applicant argues that Kumar et al. requires the presence of a cesium additive and pullucite which the claimed catalyst does not. This argument has been considered but is not persuasive. As discussed above, The transitional phrase "consists essentially of" limits the scope of the claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristics" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For search and examination purposed, absent a clear indication in the specification of what the basic and novel characteristics actually are, "consists essentially of" will be construed as equivalent to "comprising." When an applicant contends that additional steps or materials in the prior art are excluded by the recitation "consists essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also *Ex parte Hoffman*, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989).

Because no evidence has been set forth on the record to show that the use of pollucite would materially affect the basic and novel characteristics of the instantly claimed invention, its use is considered to fall within the scope of the instant claim. In addition, the examiner notes that Kumar et al. teaches a value for the zeolite content – 70% - which falls within the range instantly claimed.

8. The Declaration under 37 CFR 1.132 filed 3/4/03 is sufficient to overcome the rejection of claims 1-31 based upon Wachter et al.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

CAI
April 9, 2003



TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700